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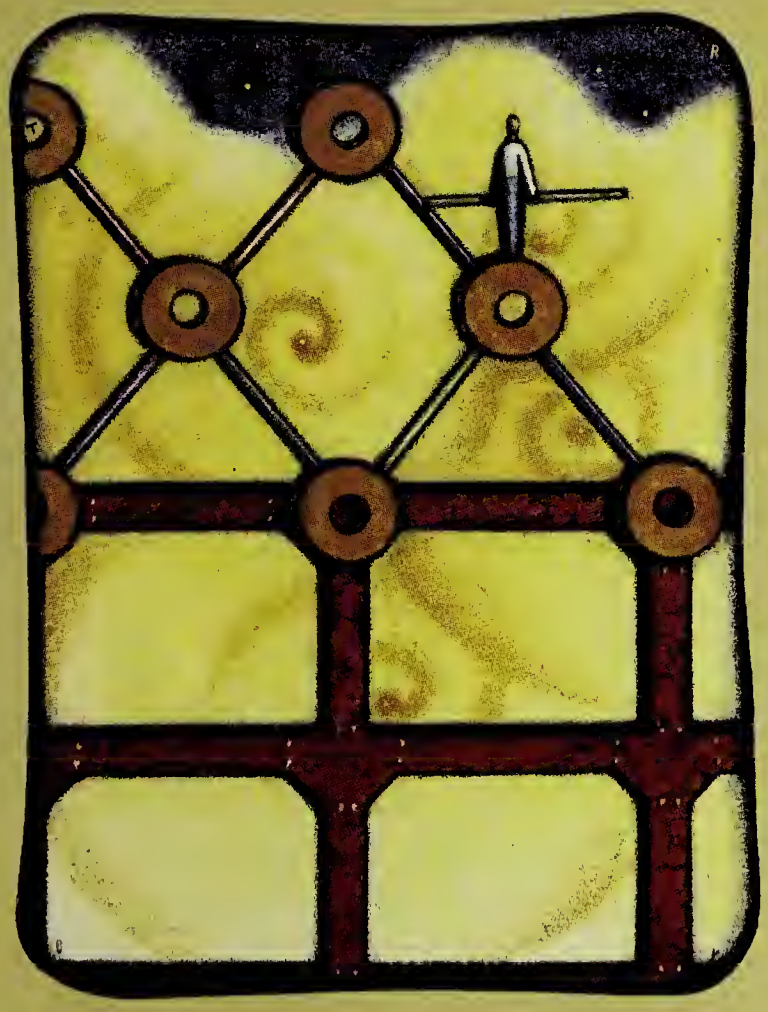
COMPUTERWORLD intranets

THE MANAGER'S GUIDE TO WHAT'S REALLY IMPORTANT

INFRASTRUCTURE

FIRM FOUNDATIONS



ILLUSTRATIONS BY TROY THOMAS

Sure, you can cheaply build an intranet atop your current infrastructure. But soft costs add up fast. Piggybacking intranet expenses onto existing projects can provide solid grounding.

BY MICHAEL FITZGERALD

Call it the "infranet." It's the corporate infrastructure that underlies your intranets. Building it means far more than installing TCP/IP and a new server or two.

"You really can very cheaply and with very little infrastructure throw [together] an intranet," acknowledges Chris Lambert, an Internet/intranet consultant for Broadway & Seymour, Inc. in Charlotte, N.C. "The question is, how valuable is it?"

Most companies naturally have some of the pieces in place. So piggybacking an intranet on current or

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planned systems is a sound fiscal start. It's long-term maintenance and growth you have to plan for.

An infranet comprises both equipment and people, to support the users and develop interfaces and apps. Having a handle on both might determine whether your project succeeds or fails.

From the ground up

Beyond TCP/IP and user desktop systems, intranet managers say, a solid infrastructure includes:

- Bandwidth: the ability to handle increased network traffic.
- Support for users and the content they manage.
- Well-designed user interfaces and applications.

A solid yet flexible foundation is key because requirements change, says Rick Brennan, who directs Internet development at Sun Microsystems, Inc. Getting a free (or cheap) ride on another budgeted project is a common strategy for getting off the ground.

That's the method The Sharper Image used, says Vince Barriero, senior vice president and CIO. The San Francisco specialty retailer had long wanted to give store managers real-time access to corporate databases to speed ordering, cut inventory and boost customer satisfaction. Salespeople placed orders through a voice response system or uploaded them after hours for processing the next day.

Unfortunately, Barriero says, store transaction volume wasn't sufficient to cover the hardware and telecommunications costs needed to put in a dedicated server connected to the corporate database. "We could never cost-justify it," he says.

But by piggybacking it on a store systems upgrade project, Barriero got an intranet essentially for nothing. The upgrade cost $4,500 to $5,000 per store for new hardware and $100,000 total for software development, hardware deployment and telecommunications at the main corporate site. But the intranet was included essentially for free, Barriero says.

The Texas State Comptroller's Office is converting its SNA environment to TCP/IP and rolling out intranet applications as it goes, says systems analyst Ralph Hutchins.

The $50,000 price tag for the intranet pilot — including a dedicated new RS/6000, the software suite and con-

WHAT ABOUT SYSTEMS MANAGEMENT?

Entergy Services Co. has about 1,000 intranet users and no bandwidth issues so far. United Parcel Service has 4,000 intranet users and reports no slowdowns either. But neither company is using any systems management tools. So is a clogged — or crashed — intranet just a matter of time?

Perhaps it's systems management that's a matter of time.

Before you can use systems management tools, they have to be available. And before you can manage a system, a structure for doing so has to exist. As the often ad-hoc nature of early intranets matures, administration should follow.

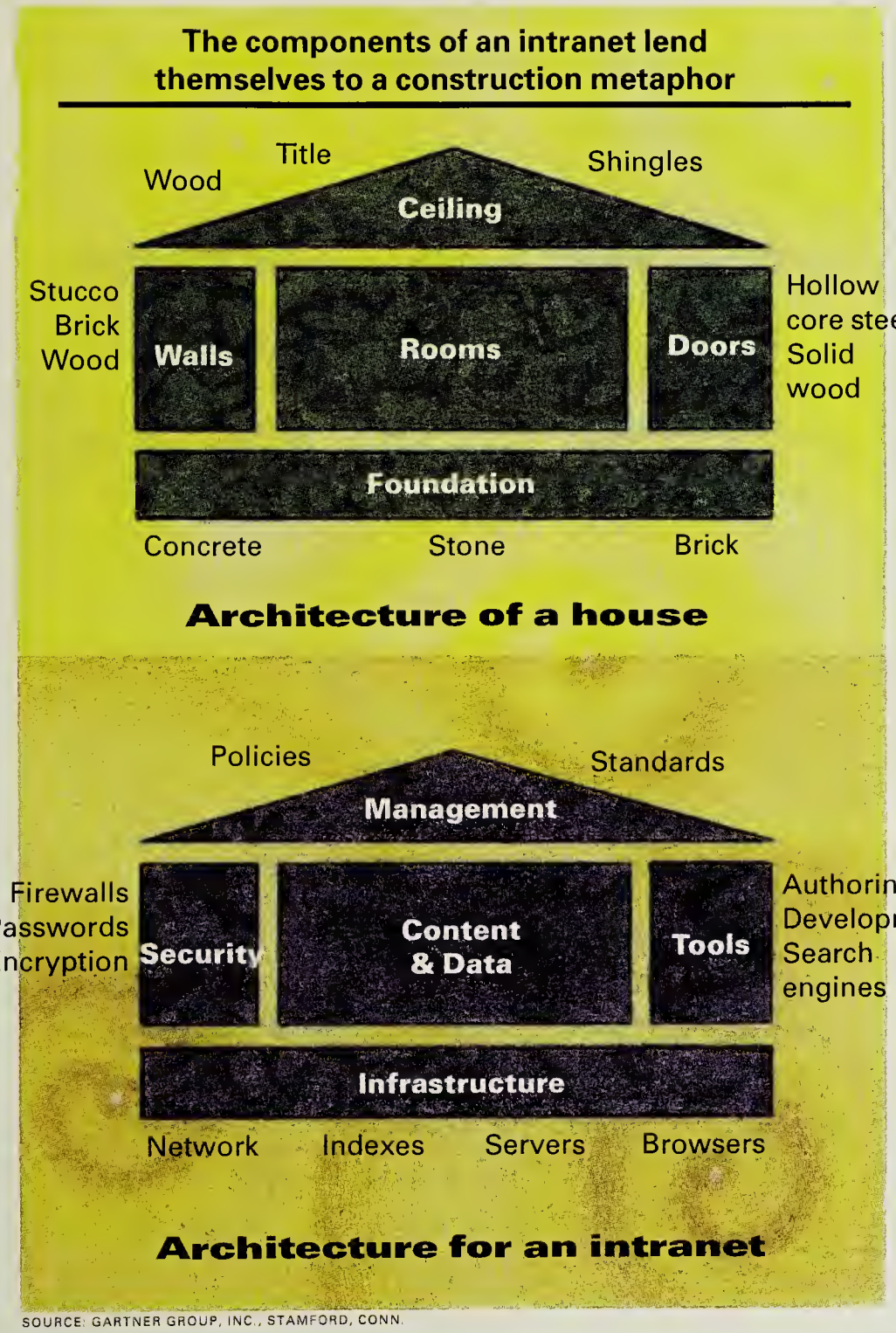
"There is no [intranet] systems management being done so far," says Earl Perkins, manager of network projects at Entergy in Gretna, La. "It'll continue to be done in ad-hoc fashion until you treat these applications like an application, and you draw it under the systems management umbrella."

"A lot of people are living in a world of rudimentary system observation," says Michael Sullivan-Trainor, director of electronic commerce programs at International Data Corp. in Framingham, Mass. Most companies throw together an intranet with some HTML and CGI access code, he says, and "hope the whole thing doesn't crash."

Sullivan-Trainor says software packages and services to handle intranet site-monitoring are becoming more available. Web products from vendors such as Netscape, Net.Genesis, Secure Computing (WebTracker), and Microsystems Software (CyberSentry) are in this group. Traditional traffic management tools — CA Unicenter or HP OpenView, for instance — can be called into service as well.

Savvy intranet managers will pay attention — or pay the price of crashes and unreliable internal servers.

— Michael Fitzgerald



SOURCE: GARTNER GROUP, INC., STAMFORD, CONN.

sulting and programming costs — was largely absorbed into the budgeted migration project, Hutchins says.

At United Parcel Service of America, Inc., a huge intranet expansion will "hitch a ride" on a project to upgrade various router links to bandwidths as high as T1 speeds, says Joseph Lawless, project manager of Internet systems at UPS.

And much of the foundation for providing intranet access to 80,000 users, vs. the 4,000 now, by early next year is already there. UPS already has IP stacks on desktops running Windows 95 and Windows NT as well as on Novell, Inc. NetWare servers.

Lawless does predict usage costs will rise as more key corporate information goes online. "More and more people expect the data to be up," he says.

Bandwidth issues

On the networking end, surprisingly, one observer says intranet traffic needn't clog the pipes.

"For a company that's well-automated, [an intranet] will consolidate a lot of traffic," says Broadway & Seymour's Lambert.

But things can still back up on the server end. Many companies start intranets with low-budget, low-end servers, which choke when the companies post "fat" documents like human

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ONLINE @

- For profiles of the users in our analysis story, see our site at http://www.computerworld.com/intranets.

ALSO ONLINE THIS MONTH:

- Forum with Web consultant Michael Sullivan-Trainor of IDC

- QuickPoll: Intranet funding. Tell us: What do they really cost?
- Expanded interview with Chrysler CIO Susan Unger
- Unger's Top 10 Reasons to Create an Intranet
- Link into Chrysler's public relations site
- Shows and conferences
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resources materials. Ironically, that can make it harder for employees to get documents online than off-line.

Plus, switching to TCP/IP can clog host processors. "We've noticed an increased load," says Texas systems analyst Hutchins.

TCP/IP makes the department's IBM mainframe a heavily trafficked network host, which sucks up processor cycles and runs less efficiently than under SNA. Plus, Hutchins says that because of the extra hits, the department needs to spend $20,000 for a second 3172 front-end communications controller .

UPS isn't taking any chances. It's expanding bandwidth to avoid future traffic jams, says project manager Lawless.

And to maximize uptime, it expects to offer full redundancy for its Web servers. It may even mirror the entire site, including support services, the domain name server (DNS) and the proxy server — 15 servers in all. "We need to determine what's crucial and what's nice-to-have," Lawless says.

Reliability is an issue at Hibernia National Bank in New Orleans, too. Its Vision 2000 project is part of a three-tiered client/server project. Asks Thad Hymel, the project's chief technologist: "How redundant is redundancy? Regionally? To the branches? We're beating our heads against the solution."

The bank will likely build in redundancy at the branch level, using Novell's NetWare IP 2, he says.

ADVICE

• Get end-user buy-in

"At a managers' meeting a few months ago, we put together a proof of concept for the intranet, and we got so much positive response. That was a big help . Once we go to upper management, they've heard about it, and it should make it a lot easier."

— Thad Hymel, Hibernia Bank

• Expect higher costs

"Costs are more toward the quadruple [of what you expect]."

— Joseph Lawless, UPS

• Beware of crunches

"IBM's 3172 controller Model 3 offloaded some TCP/IP functions from the mainframe. But when a shop has more than 1,000 TCP/IP terminals hitting the controller, you get basically no response, or it would just crash. We had to stop using that software and use something called ICP, which loads everything back on the mainframe."

— Ralph Hutchins, state of Texas

• Set design principles

"When rolling out an intranet, make sure you have consistent look-and-feel and have templates. It's not enough to just say, 'Do it this way.'"

— Jakob Nielsen, Sun

Support issues

If hardware and even networking can sometimes be practically freebies, here's the hidden cost: support.

"A lot of people need help configuring a browser," notes UPS' Lawless.

UPS employs 20 people to support the company's intranets and a World Wide Web page that sometimes logs 350,000 hits a day.

Indeed, people resources are tapped from the get-go. Building an intranet means "everybody has to get involved: PC people, network people, etc., and a lot of that falls under ongoing support and maintenance," says Texas' Hutchins.

The development end can't be shortchanged, either. Developing a universal interface for intranet pages is arguably the most crucial intranet task: A large corporation could waste $1 million or more a year trying to locate material in departmental Web sites, says Jakob Nielsen, a human interface engineer at Sun Microsystems, Inc. Yet many companies skimp on interface design when planning the system.

"There's a physical infrastructure and an information infrastructure," Nielsen notes. He's just updated Sun's intranet interface, whose design had been overwhelmed since it was created two years ago. "We're trying to reimpose structure," he explains.

That's what an infranet is. It ain't an intranet for long without one.

— Fitzgerald is* Computerworld's *former online editor.

Resources Resources Resources Resources Resources Resources Resources Resources Resources

CONFERENCES

The Business Online Conference: An Executive Guide to Internet and Intranet Strategy. San Diego, Calif. Dec. 3-4. Features more than 20 sessions. Sponsors: Meta Group, DCI. Information/registration: (508) 470-3880, or E-mail ConfReg@dciexpo.com.

DEMOS

Still skeptical how your company could use an intranet? Visit Acme Fruit & Nut's site and see one in action. The home page offers company news and links to business units. Some functions are interactive. Includes a list of the software used in building it, too. http://foghorn.acmedia.com/

BOOKS: NEW TITLES

"Intranet Working" by George Eckel (New Riders Publishing, $35). "Running a Perfect Intranet" by Rick Casselberry (Que, $49.99). "Introducing Intranets" by Gordon Benett (Que, $24.99). To order: (800) 428-5331, or link via our online edition at http://www.computerworld.com/intranets.

Netscape's James Barksdale on Informix.

James Barksdale
President and CEO, Netscape Communications

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VP of Business Development, Informix

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PROJECT

Chrysler Corp.

Auburn Hills, Mich.

$53 billion automaker

At Chrysler Corp. (http://www.chryslercorp.com), intranets are more than just a pretty interface. "You really need to focus on infrastructure," says CIO Susan Unger. "You'll need it."

To date, the automaker has seven major corporate intranets. One serves 6,000 engineers. Another enables activity-based costing for financial users. A third, built for public relations, extends into a public Web site for journalists.

Led by Unger, small teams are actively identifying gaps in Chrysler's enterprise infrastructure. "The hard part is knowing where the gaps are," she says. "Does it really warrant investment or not? We try to make a clear business case why it's important to have. It [isn't] just the intranet development for its own sake."

The company plans a 15% to 20% annual increase in network capacity, in part to handle intranet growth, she says.

ROLES

IS pays for infrastructure and networks. Application costs are split with user groups. Intranet development is decentralized; there are now seven developers. Joint/rapid application development, business process redesign methods are used. "The customer has to be the content owner. In some organizations, that's fallen on the shoulders of IS. Our responsibility is to provide the technology."

PEOPLE CHALLENGES

"Our biggest adjustment was $2^1/_2$ years ago when we fully endorsed client/server. That was a huge training issue. We've gotten over that hurdle; this is almost easier to handle. We don't view training as a big problem. It doesn't take long to pick up the appropriate training. You can go in a week and become a webmaster. It's really exciting."

TECHNICAL CHALLENGES

Software that's poorly Web-enabled and difficult to integrate is a challenge. "When you start trying to hook up a number of software products, they don't work. You could probably do some integration if you really wanted to do that work. But do you?"

PAYOFF METRICS

Better cycle times, speed of delivery, improved quality are results. Another plus: speedy development. Time to create some apps was cut from six months to two weeks. "It's incredible. People had never done a Web site before, and it took a total of two months to entirely complete it — and that included the learning curve and specing it."

TOOLS

"We look at tools and how easy are they for my people to use and for the customer to use. If I have to throw them away a year from now, it's not a big problem."

PROCESS

"We did an intranet and Internet for our PR organization. It started with a really small target group and pilot group. We're now [reaching] up to over 300 journalists. As Chrysler information is released on the newswire, it's simultaneously relayed on the Web site, organized by subject areas, press releases, facts, biographies. Before building that, I had my people go out and watch [the PR people] work and follow the flow and what they were doing. We took that process."

LOTUS NOTES AND INTRANETS

Using an Internet/intranet system is cheaper and the developer skills are easier to learn than with other systems. "Netscape is more open. Lotus Notes is hard to administer but better than Netscape. Servers have been hard to administer. Directory services had been a nightmare. But it's not all that bad in the intranet environment."

EDI

"We require EDI on the buy side. For EDI on the sell side, it makes more sense down the road to go the Internet."

ADVICE

"You need to actively push the organization if they are not into it. The network is the computer; you really need to understand that from a development point. We're almost pushing our customers maybe more than they would like. You need a very iterative process in which you do things quickly and throw it away. This is a big change of mind-set."

— Joseph Maglitta

CHRYSLER CIO SUSAN UNGER: *"You need a very iterative process in which you do things quickly and throw it away. This is a big change of mind-set."*

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–The Forrester Report
The Full Service Intranet, March, 1996

And *PC WEEK* said:

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–*PC WEEK*, May 13, 1996

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